Human Computer Interaction

Group Project – Fergus Scott, Glen Bowen, Jake Dec, Sean Fitzpatrick

Proposal Part 2

The Problem: Jake (one of our members) works in a lab that regularly uses a suite of 3D printers to accomplish a range of tasks that they are prescribed. However, Jake often finds that the scheduling and organization of these machines is haphazard at best, and so we felt like there was a potential problem that we could solve there. The plan is to create a live interface that gives a clear and obvious view of which 3D printers are available at the current time, and for how long.

The users: The user profile of this group is fairly specific in the sense that it will almost exclusively be people who are in an office setting that utilizes 3D printers to some significant extent. However, we feel that given the specificity of our software, it may be able to solve a very specific problem with a high degree of accuracy. What we mean by this is that, even though there is scheduling software that exists, it is “general” machinery scheduling, whereas Our tool would be more relevant to small companies that utilize 3D printers in a prototyping capacity, and organizations like maker spaces, which may have a variety of 3D printing assets, and a variety of users of differing experience levels.

The literature/existing tech: Scheduling/task-based software is nothing new, there are myriad different applications that cover a wide variety of purposes. The main issue we see, however, is that most of these pieces of software are industrial size or “heavy”, so to speak. The target audience for our application is of a much smaller size, and a much more singular purpose. For example, a lab with 12 3D printers, whose only hardware is 3D printers, would find our application useful as they don’t have many printers, and they would find all the additional features of more sophisticated software, superfluous.

One existing software is called Link3D[[1]](#footnote-1). This software has about 10 different key functionalities, some of which would be entirely unsuitable for a small lab. For example, some features include “Auto-Quoting and Build Simulation” and “Real-Time Work Order Collaboration”. While excellent and useful features for some, these are unnecessary for a simple visual scheduling/activity need. Another example, “fabpilot”[[2]](#footnote-2) falls into the same bucket. The reality is that these products are surely excellent, but fit a more enterprise level of business, which is not the niche we are trying to fill. Further to this, the industrial size of these software products means that the price is also significantly more than the range we are expecting our product to be in (the cheapest package for fabpilot is $100 p/month).

The crux of the issue is essentially this: we are trying to fill a very specific niche of the market. Are there solutions that exist that could potentially be used to fill this niche already? Probably. However, we feel our product is a more elegant solution for smaller, more agile entities to use for a cheaper, more user-friendly experience. We would also like to make it easier for people new to 3D printing to utilize the resources, without overburdening advanced users with extra steps in the process.

1. <https://solution.link3d.co/3d-printing-scheduling-software.html> [↑](#footnote-ref-1)
2. <https://www.fabpilot.com/3d-printing-services/> [↑](#footnote-ref-2)